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# PATENT SPECIFICATION

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(19)



## (54) A TOY

(71) We, HILARY PAGE "SENSIBLE" TOYS LIMITED, a British Company of Godstone Road, Kenley, Surrey, do hereby declare the invention for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to a toy.

According to this invention there is provided a toy comprising a transparent globe of a plastics material, two or more hollow resiliently deformable plastics balls, and a base member adapted to secure the globe to a surface, the globe having a boss serving to connect same to the base member with an aperture extending through the boss to the interior of the globe, the diameter of the balls being greater than the aperture, but such that each ball may be forced there-through into the globe by virtue of their deformability.

In this toy the balls cannot be removed in the normal course of use from the globe once inserted.

The globe preferably is of a rigid polyvinylchloride material and the balls of a different material such as a nylon material typically "Maranyl" (a Registered Trade Mark of I.C.I. Limited) or an acrylic material such as "Diakon" (a registered Trade Mark of I.C.I. Limited), and it has been found that in such a case the balls attain like electrostatic charges with the globe having an opposite charge. Suspension of one ball can thus be obtained or even attachment to an upper part of the globe by electrostatic forces. Vigorous shaking produces the necessary charges.

An embodiment of the invention is described in conjunction with the accompanying drawing by way of an example.

The toy shown has a globe 1 of transparent rigid PVC plastics material, with external projections 2 for tactile interest and

internal ridges 3 for the purpose of causing the balls 4 to bounce inside the globe rather than simply running around the surface.

The globe has a boss 5 with external threading 6 which connects with a threaded socket 7 of a base 8. The base 8 itself connects with rubber suction cup 9 (not shown in detail). The boss 5 has an aperture 10 through which the balls 4 may be forced. The balls are resiliently deformable and of a hollow flexible PVC material with a diameter greater than aperture 10. They may be formed by blow-moulding. Once inside the globe the balls cannot be removed, at least in normal usage.

It has been found that during violent motion of the balls, assisted by the aforesaid "bouncing" effect, the balls and globe become oppositely charged by mutual rubbing affects. Research indicates that the globe becomes negatively charged whilst the balls acquire a positive charge. The charge acquired is dictated by the ease and degree of charge transfer from globe to balls and the leakage. Using certain materials, leakage is very low with measured time constants of around 100 seconds (22.5°C, 64% RH). Best results are achieved if materials with low non-ionic compound concentrations are not used, especially surface-active types which reduce resistances to an unsatisfactory level.

Materials useful for the balls are soft PVC, such as "Maranyl" or "Diakon" (both Registered Trade Marks of I.C.I. Limited).

These charges produce interesting effects due to mutual repulsion of the balls and their attraction to the globe. Suspension of one ball above another with up to one inch spacing has been observed.

### WHAT WE CLAIM IS:-

1. A toy comprising a transparent globe of a plastics material, two or more hollow resiliently deformable plastics balls, and a base member adapted to secure the globe to

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a surface, the globe having a boss serving to connect same to the base member with an aperture extending through the boss to the interior of the globe, the diameter of the balls being greater than the aperture, but such that each ball may be forced there-through into the globe by virtue of their deformability.

2. A toy according to Claim 1, wherein the boss is externally threaded for engagement with an internally threaded recess in the base.

3. A toy according to Claim 2, wherein the aperture through the boss widens towards the globe where the internal diameter is greater than that of a ball such that a ball may lie, partly at least, within the boss.

4. A toy according to any preceding claim, wherein the outer surface of the globe has integral projections thereon.

5. A toy according to any preceding claim, wherein the globe is of a synthetic plastics material of one type, and the balls are of a synthetic plastics material of another type, the two types being such that friction therebetween may produce opposite electrostatic charges thereon.

6. A toy according to any preceding claim, wherein the internal surface of the globe includes ridges or projections upon which the balls may bounce.

7. A toy according to any preceding claim, wherein the globe is of a rigid polyvinylchloride material and the balls are of a nylon material or acrylic material.

8. A toy constructed and arranged to function substantially as herein described with reference to and as shown in the accompanying drawing.

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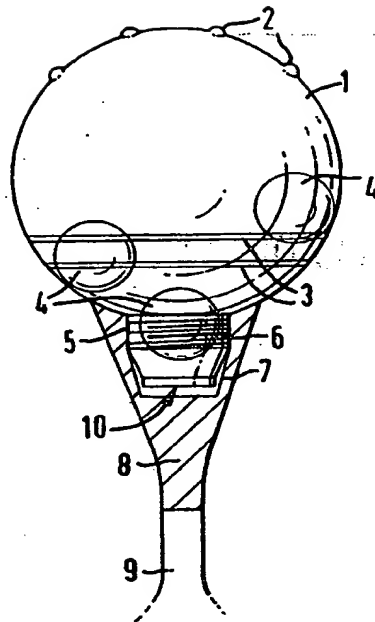
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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*



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